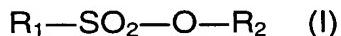


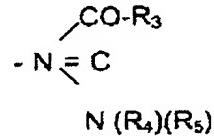
Claims

1. Process for curing amino resins, characterized in that layers with thicknesses up to 300 µm or filaments or fibrils with a diameter up to 300 µm and comprising
- e) from 95 to 99.95% by mass of solvent-free meltable amino resin polycondensates having molar masses of 1 000 to 300 000,
 - f) from 5 to 0.05% by mass of curing agents which can be activated by actinic light and are composed of
 - b1) acid formers of the type of blocked sulphonic acid of the general formula (I)

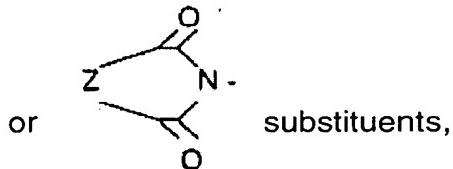


R_1 = unsubstituted or substituted aryl, biphenyl or alkyl,

R_2 = 4-nitrobenzyl, pentafluorobenzyl,



substituents



Z = c₆-c₂₄-aryl, c₆-c₄-alkyl, c₆-c₄-alkenyl,
c₇-c₈-bicycloalkenyl,

where

R_3 = non-substituted or substituted alkyl or aryl,

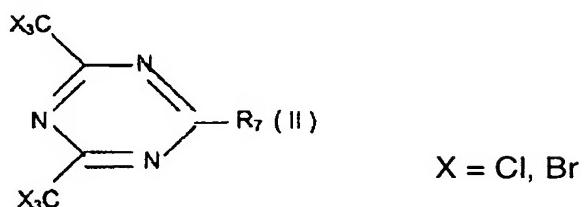
R_4 = H, C₁-C₁₂-alkyl, phenyl, C₂-C₉-alkanoyl or benzyl,

R_5 = H, C₁-C₁₂-alkyl or cyclohexyl

or R_3 and R_4 or R_5 together with the atoms to which they are attached form a 5- to 8-membered ring which can be fused by 1 or 2 benzo radicals,

and/or

- b2) halogen-substituted triazine derivatives of the general formula (II)



$\text{R}_7 = \text{C}_1\text{-C}_{16}\text{-alkyl, alkoxy,}$
 $\text{C}_1\text{-C}_{16}\text{-aryl}$
biphenyl, naphthyl,
 and/or

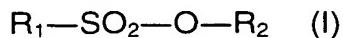
- b3) onium salts of the type of aryl diazonium salts, diarylhalonium salts, triarylsulphonium salts, triarylselenonium salts and/or N-alkoxypyridinium salts,

and if desired

- g) from 1 to 20% by mass, based on the meltable amino resin polycondensates, of non-modified and/or modified maleic anhydride copolymers, and/or
- h) from 0.1 to 5% by mass, based on the meltable amino resin polycondensates, of nanoparticles in the form of phyllosilicates, hydrophilic or hydrophobic synthetic silicas, calcium carbonate or metal oxides of the ZnO , SnO , Al_2O_3 or TiO_2 type.

are cured by irradiation with actinic light at a temperature between the melting point of the amino resin polycondensate and the thermoinduced decomposition temperature of the light-activable curing agents, and if desired are subjected to a thermal aftercure below 250°C.

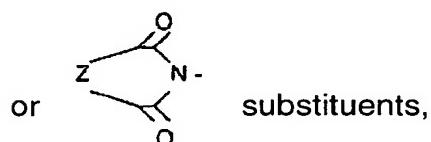
2. Process for curing amino resins according to Claim 1, characterized in that the acid formers of the type of blocked sulphonic acid of the general formula



are blocked sulphonic acids in which the substituents

R_1 = unsubstituted or singly or multiply halogen-, C₁-C₄-haloalkyl-, C₁-C₁₆-alkyl-, C₁-C₄-alkoxy-, C₁-C₄-alkyl-CO-NH-, phenyl-CO-NH-, benzoyl- and/or nitro-substituted C₆-C₁₀-aryl or C₇-C₁₂-arylketyl,

R_2 = 4-nitrobenzyl, pentafluorobenzyl, $\begin{array}{c} \text{CO-}R_3 \\ | \\ -\text{N}=\text{C}- \\ | \\ \text{N}(R_4)(R_5) \end{array}$ substituents,



Z = c₆-c₂₄-aryl, c₂-c₄-alkyl, c₂-c₄-alkenyl,
c₇-c₈-bicycloalkenyl,

where

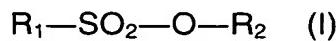
R_3 = C₁-C₁₂-alkyl, C₁-C₄-haloalkyl, C₂-C₆-alkenyl, C₅-C₁₂-cycloalkyl, unsubstituted or singly or multiply halogen-, C₁-C₄-haloalkyl-, C₁-C₁₆-alkyl-, C₁-C₄-alkoxy-, C₁-C₄-alkyl-CO-NH-, phenyl-CO-NH-, benzoyl- and/or nitro-substituted C₆-C₁₀-aryl and/or C₇-C₁₂-arylalkyl, C₁-C₈-alkoxy, C₅-C₈-cycloalkoxy, phenoxy or H₂N-CO-NH-, -CN, C₂-C₅-alkyloyl, benzoyl, C₂-C₅-alkoxycarbonyl, phenoxy carbonyl, morpholino, piperidino, C₁-C₁₂-alkyl, C₁-C₄-haloalkyl, C₂-C₆-alkenyl, C₅-C₁₂-cycloalkyl, unsubstituted or singly or multiply halogen-, C₁-C₄-haloalkyl-, C₁-C₁₆-alkyl, C₁-C₄-alkoxy, C₁-C₄-alkyl-CO-NH-, phenyl-CO-NH-, benzoyl- and/or nitro-substituted C₆-C₁₀-aryl, C₇-C₁₂-arylalkyl, C₁-C₈-alkoxy, C₅-C₈-cycloalkoxy-, phenoxy- or H₂N-CO-NH-,

R₄ = H, C₁-C₁₂-alkyl, phenyl, C₂-C₉-alkanoyl or benzyl

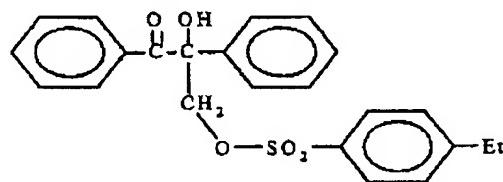
R_5 = H, C₁-C₁₂-alkyl or cyclohexyl,

or R₃ and R₄ or R₅ together with the atoms to which they are attached form a 5- to 8-membered ring which can be fused by 1 or 2 benzo radicals.

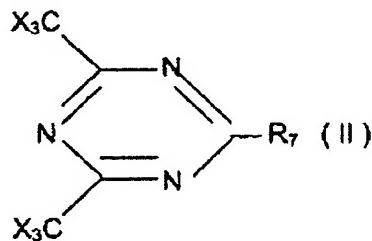
3. Process for curing amino resins according to Claim 2, characterized in that the acid former of the type of blocked sulphonic acid of the general formula



is a blocked sulphonic acid of the structure

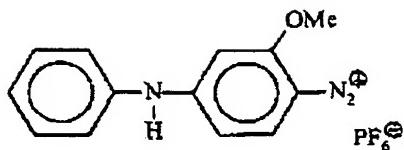


4. Process for curing amino resins according to Claim 1, characterized in that the acid formers of the type of halogen-substituted triazine derivatives of the general formula (II)



are halogen-substituted triazine derivatives in which X = Cl and R₇ = p-methoxyphenyl.

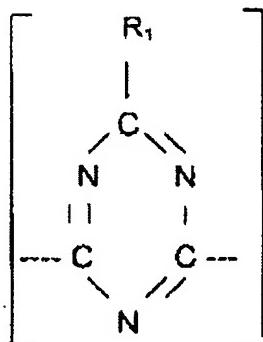
5. Process for curing amino resins according to Claim 1, characterized in that the onium salt is an onium salt of the formula



6. Process for curing amino resins according to Claim 1, characterized in that the amino resin polycondensates are polycondensates of melamine resins, urea resins, cyanamide resins, dicyandiamide resins, sulphonamide resins and/or guanamine resins.

7. Process for curing amino resins according to Claim 1, characterized in that the polycondensates of melamine resins are mixtures of meltable 4- to 1000-nucleus polytriazine ethers,

where in the polytriazine ethers the triazine segments



$\text{R}_1 = -\text{NH}_2, -\text{NH-CHR}_2-\text{O-R}_3, -\text{NH-CHR}_2-\text{O-R}_4-\text{OH}, -\text{CH}_3, -\text{C}_3\text{H}_7,$
 $-\text{C}_6\text{H}_5, -\text{OH}, \text{phthalimido-}, \text{succinimido-}, -\text{NH-CO-C}_5\text{-C}_{18}\text{-alkyl},$
 $-\text{NH-C}_5\text{-C}_{16}\text{-alkylene-OH}, -\text{NH-CHR}_2-\text{O-C}_5\text{-C}_{18}\text{-alkylene-NH}_2,$
 $-\text{NH-C}_5\text{-C}_{18}\text{-alkylene-NH}_2, -\text{NH-CHR}_2-\text{O-R}_4-\text{O-CHR}_2-\text{NH-},$
 $-\text{NH-CHR}_2-\text{NH-}, -\text{NH-CHR}_2-\text{O-C}_5\text{-C}_{18}\text{-alkylene-NH-},$
 $-\text{NH-C}_5\text{-C}_{18}\text{-alkylene-NH-}, -\text{NH-CHR}_2-\text{O-CHR}_2-\text{NH-},$

$\text{R}_2 = \text{H, C}_1\text{-H}_7\text{-alkyl:}$

$R_3 = C_1\text{-}C_{18}\text{-alkyl, H;}$

$R_4 = C_2\text{-}C_{18}\text{-alkylene,}$

$-\text{CH(CH}_3\text{)}\text{-CH}_2\text{-O-}C_2\text{-}C_{12}\text{-alkylene-O-CH}_2\text{-CH(CH}_3\text{)}\text{-},$

$-\text{CH(CH}_3\text{)}\text{-CH}_2\text{-O-}C_2\text{-}C_{12}\text{-arylene-O-CH}_2\text{-CH(CH}_3\text{)}\text{-},$

$-\text{[CH}_2\text{-CH}_2\text{-O-CH}_2\text{-CH}_2\text{]}_n\text{-, } -[\text{CH}_2\text{-CH(CH}_3\text{)}\text{-O-CH}_2\text{-CH(CH}_3\text{)}\text{]}_n\text{-,}$

$-[-\text{O-CH}_2\text{-CH}_2\text{-CH}_2\text{-CH}_2\text{]}_n\text{-,}$

$-[(\text{CH}_2)_{2\text{-}8}\text{-O-CO-}C_6\text{-}C_{14}\text{-arylene-CO-O-(CH}_2\text{)}_{2\text{-}8}\text{-}]_n\text{-,}$

$-[(\text{CH}_2)_{2\text{-}8}\text{-O-CO-}C_2\text{-}C_{12}\text{-alkylene-CO-O-(CH}_2\text{)}_{2\text{-}8}\text{-}]_n\text{-,}$

where $n = 1$ to 200;

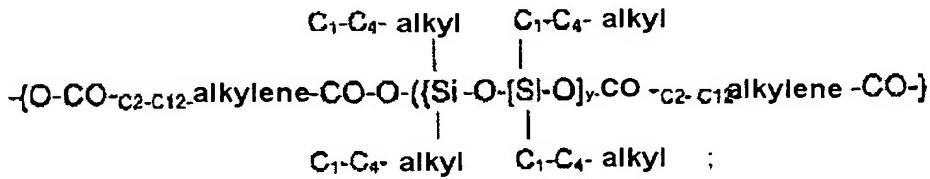
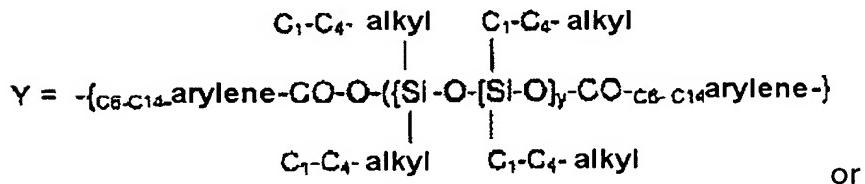
- polyester sequences containing siloxane groups, of the type

$-\{(\text{X})_r\text{-O-CO-(Y)}_9\text{-CO-O-(X)}_r\}-$

in which

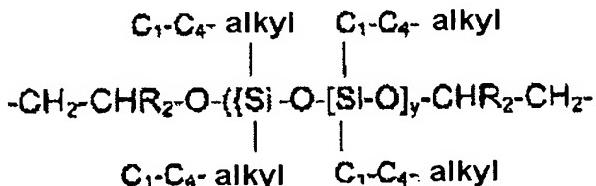
$\text{X} = \{(\text{CH}_2)_{2\text{-}8}\text{-O-CO-}C_8\text{-}C_{14}\text{-arylene-CO-O-(CH}_2\text{)}_{2\text{-}8}\text{-}\} \text{ or}$

$\{(\text{CH}_2)_{2\text{-}8}\text{-O-CO-}C_2\text{-}C_{12}\text{-alkylene-CO-O-(CH}_2\text{)}_{2\text{-}8}\text{-}\}$



$r = 1$ to 70; $s = 1$ to 70 and $y = 3$ to 50;

- polyether sequences containing siloxane groups, of the type



where $R_2 = H$; $C_1\text{-}C_4\text{-alkyl}$ and $y = 3$ to 50;

- sequences based on alkylene oxide adducts of melamine, of the type of 2-amino-4,6-di- $C_2\text{-}C_4$ -alkylenamino-1,3,5-triazine sequences;

- phenol ether sequences based on dihydric phenols and C₂-C₈ diols of the type of -C₂-C₈-alkylene-O-C₆-C₁₈-arylene-O-C₂-C₈-alkylene-sequences;

are linked by bridge members -NH-CHR₂-NH- or -NH-CHR₂-O-R₄-O-CHR₂-NH- and -NH-CHR₂-NH- and also, where appropriate, -NH-CHR₂-O-CHR₂-NH-, -NH-CHR₂-O-C₅-C₁₈-alkylene-NH- and/or -NH-C₅-C₁₈-alkylene-NH- to form 4- to 1000-nucleus polytriazine ethers with a linear and/or branched structure,

where in the polytriazine ethers the molar ratio of the substituents R₃:R₄ = 20:1 to 1:20 and the fraction of the linkages of the triazine segments through bridge members -NH-CHR₃-O-R₄-O-CHR₃-NH- is from 5 to 95 mol%.

8. Process for curing amino resins according to Claim 1, characterized in that the curing of layers of amino resins takes place continuously by irradiation of the melt layer of the amino resin polycondensate applied to moving carrier materials.
9. Process for curing amino resins according to Claim 1, characterized in that curing of filaments or fibrils of amino resins takes place continuously by irradiation of the filaments or fibrils, discharged as a viscous melt, following the fibre-forming operation.
10. Amino resin products, preferably sheetlike textile structures or coatings, produced according to one or more of Claims 1 to 9.